

SUMMARY  
BIOLOGICAL OPINION ON THE EFFECTS TO  
THE MEXICAN SPOTTED OWL AND THE PEREGRINE FALCON  
FROM THE PROPOSED  
FOREST SERVICE, REGION 3 MANAGEMENT ACTIVITIES

Date of the opinion: May 12, 1994

2-21-91-F-043  
2-21-92-F-573  
2-21-93-F-329  
2-21-94-F-101

Action agency: U.S. Forest Service, Region 3

Project: Six proposed projects on two forests in Arizona. Activities include timber harvest and campground construction.

Listed species affected: Mexican spotted owl (Strix occidentalis lucida) and American peregrine falcon (Falco peregrinus anatum).

Biological opinion: Non-jeopardy.

Incidental take statement: Level of incidental take anticipated is 3 Mexican spotted owls due to harm caused by habitat destruction and disturbance (Pine Canyon Campground). No direct mortalities are authorized for the Mexican spotted owl and the peregrine falcon.

Reasonable and prudent measures: Two objectives for minimizing incidental take are provided for the Mexican spotted owl and two are provided for the peregrine falcon. Implementation of these measures through terms and conditions is mandatory.

Terms and conditions: For the Mexican spotted owl: Limits set by Forest Service Region 3 Interim Directive 2 will be met, disturbance to breeding pairs will be avoided during the breeding season, use restrictions are placed relating to development of the Pine Canyon Campground, disturbance to unsurveyed suitable habitat in MTs will be avoided, restrictions are placed on harvesting owl habitat in Management Territories (MTs), unsurveyed suitable habitat will be surveyed or a MT will be established (Brannigan TS), disturbance will be restricted during the breeding season and treatment will be dropped within 1.10 mile of unsurveyed suitable MSO habitat on the Mesa Timber Sale if surveys are not completed, an additional MT will be established in conjunction with the Mesa Timber Sale, treatment will be modified on 57 acres of the Jacks/Buck Mountain 20K, treatment in suitable habitat in the Paris ELU will be deleted from the proposed action, conditions of the Dispersal Habitat Rule (DHR) will be maintained and additional restrictions are placed on treatment in analysis areas that do not currently meet the DHR, and fuels treatments must meet minimum guidelines. For the peregrine falcon: Survey of suitable habitat adjacent to the Paris and Holy Hollow Timber Sales and Pine Canyon Campground will occur, and no intrusive project-related activities will be conducted within one-half mile of suitable nesting habitat during the nesting season.

Conservation recommendations: Implementation of conservation recommendations is discretionary. Sixteen conservation recommendations are provided.



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
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May 12, 1994

In Reply Refer To:

AESO/ES  
2-21-91-F-043  
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Forrest Carpenter, Acting Regional Forester  
U.S. Forest Service  
Southwestern Region  
517 Gold Avenue SW  
Albuquerque, New Mexico 87102-0084

Dear Mr. Carpenter:

This is in response to the November 19, 1993 request from Regional Forester Larry Henson to initiate formal consultation with the Fish and Wildlife Service (Service) under section 7 of the Endangered Species Act (Act) for a total of seven projects in the Southwestern Region of the Forest Service. The formal consultation period began on November 24, 1993, the day we received the request. The species of concern for this consultation are the Mexican spotted owl (MSO) (Strix occidentalis lucida) which is listed as threatened, and the peregrine falcon (Falco peregrines anatum), listed as endangered under the Act. Two projects, the Brannigan Vegetative Treatment and the Holy Hollow Ecological Land Unit (ELU), were submitted with a determination of "no affect" to the Mexican spotted owl by the respective National Forest. The Service could not concur that these projects would not effect MSO during the informal consultation process and cannot concur now. Although the Forest Service submitted these projects for formal consultation with a determination of "no affect", the Service used the information provided to conduct a formal consultation and develop a biological opinion as requested. In addition, the Forest determined that the Holy Hollow and Paris Timber Sales, as well as the Pine Canyon Campground project would have "no affect" on the peregrine falcon. The Service does not concur with this finding and informed the appropriate Districts that these projects may affect this species and analysis is included in this opinion. The best scientific data available, including data in our files, consultation with experts, site visits, interagency meetings, and literature review were used in this biological opinion. The Service concurs with your finding of "no affect" to other listed species that were included in the biological information provided with your request for consultation.

BIOLOGICAL OPINION

Based on the best scientific and commercial data available, it is the biological opinion of the Service that the action consisting of the seven projects addressed in the consultation package is not likely to jeopardize the continued existence of the Mexican spotted owl or the peregrine falcon.

DESCRIPTION OF THE PROPOSED ACTION

The U.S. Forest Service proposes an action consisting of seven projects on National Forests in Arizona and New Mexico in Region 3 of the Forest Service (Table 1). The proposal consists of planned and on-going activities which the respective Forests determined may affect or will not affect the Mexican spotted owl (MSO), a threatened species under the Act. These activities include projects on the Kaibab and Coconino National Forests in Arizona, and the Gila National Forest in New Mexico. The projects in this consultation package include timber sales and campground construction. These activities are summarized in Table 2:

Table 1. Seven projects that comprise the action submitted for formal consultation.

National Forest (NF) and Project Name

Arizona:  
 Coconino NF  
     Jacks/Buck 20K  
     Pine Canyon Campground  
 Kaibab NF  
     Brannigan Vegetative Treatment  
     Mesa Vegetative Treatment  
     Paris Timber ELU  
     Holy Hollow ELU  
 New Mexico:  
 Gila NF  
     Mill Timber Sale

Table 2. Summary of project numbers and types. See Table 1 for a list of projects.

<u>State</u>	<u>Forest</u>	<u>Timber sales</u>	<u>Recreation</u>	<u>Other</u>	<u>Total</u>
Arizona	Kaibab	4	0	0	4
	Coconino	1	1	0	2
New Mexico	Gila	1	0	0	1
	Subtotal	6	1	0	7

Five of the seven projects submitted in this consultation package included a determination of "may affect, not likely to adversely affect" the MSO. As mentioned previously, the Service does not concur with the "no effect" determination on the Brannigan and Holy Hollow Timber Sales. Section 7 consultation regulations permit projects, for which the Service concurs will not likely adversely affect listed species, to not require formal consultation if the Service concurs in writing with the action agency's finding. The Service concurred with the determination of "not likely to adversely affect" for the Mill Timber Sale on the Gila National Forest in New Mexico on March 7, 1994.

According to the Forest Service, the remaining six projects in this consultation will affect 543 acres of suitable owl habitat and 1547 acres of capable owl habitat. Suitable habitat is habitat that meets all of the needs of the owls including nesting, roosting, and foraging. Capable habitat is habitat that has been suitable in the past, but because of natural or human-caused changes, no longer meets all of the needs of the owl. Capable habitat may still be used for foraging but generally lacks the characteristics needed for reproduction. Table 3 lists the acreage by forest.

Table 3. Summary of suitable and capable habitat acres affected by proposed projects.

<u>State</u>	<u>Forest</u>	<u>Suitable</u>	<u>Capable</u>	<u>Total</u>
Arizona	Coconino	0	1496	1496
	Kaibab	500	151	651
Subtotal		500	1547	2147

### PROJECT DESCRIPTIONS

#### BRANNIGAN VEGETATIVE TREATMENT

##### Sale Area and Prescribed Treatment

The Brannigan Vegetative Treatment project is located in the Chalender Ranger District of the Kaibab National Forest. The Brannigan Assessment Area consists of the Brannigan and McDermitt project areas and totals 7,040 acres. The McBrann and McDermitt Timber Sales have already been completed. The remaining portion of the Assessment Area contains 3,729 acres of ponderosa pine, 1,063 acres of pine-oak, 111 acres of mixed conifer, and 235 acres of Gambel oak cover types.

According to the decision notice, alternative 4 was selected for the Brannigan Vegetative Treatment. Vegetative treatments are proposed for 2,560 acres. The treatments include shelterwood seed cut (262 acres), intermediate treatment (675 acres), selection uneven-age treatment (536 acres), aspen release (13 acres), overstory removal (282 acres) and improvement cutting (53 acres). Treatment for dwarf mistletoe infection was proposed for 786 acres.

Other activities include: allocations of 1,403 acres of old-growth, 2,010 acres of cover, and 3,405 acres where potential snags will be recruited; diseased trees greater than 18 inches in diameter at breast height (dbh) will be killed to create snags on 446 acres; allocation of 1 northern goshawk territory; underburning on 220 acres in pine to improve forage; construction of 2 guzzlers; renovation of 1 spring; partial fencing of Saddle and Forty-niner Tanks for waterfowl habitat improvement; construction of 20 bluebird houses; and pruning of dwarf mistletoe limbs on 19 acres in an alternate goshawk nest site.

Additional activities include: closing and/or obliterating 13.7 miles of roads and forage seeding on 118 acres; road reconstruction (13.1 miles) and construction (1.0 mile); treatment of logging slash on 2,274 acres (707 acres of machine piling/burning, 1347 acres of lopping, and 220 acres of broadcast burn after lop); site preparation for pine natural regeneration on 30 acres; precommercial thinning on 354 acres and sanitation thinning on 786 acres; and trail improvement on the historic Route 66 hiking trail.

##### Mexican Spotted Owl Habitat

No MSO nesting habitat is proposed for treatment. There are 37 acres of suitable mixed conifer habitat within the Brannigan Vegetation Treatment project area. This suitable habitat is located on the north side of Forty-niner Hill and is not proposed for treatment. No MSO surveys were conducted in this habitat. Five harvest units are proposed for treatment within 1/4 mile of this suitable habitat. Suitable pine/oak habitat is also present in the sale area. This habitat is present within and adjacent to several proposed harvest units. This habitat has not been surveyed for MSO and the exact amount of this habitat was not provided. The remainder of the sale area

is not considered by the Forest Service to be suitable or capable habitat, however, it may provide foraging, wintering, or dispersal habitat. The closest MSO Management Territory is approximately 7 miles away on Kendrick Mountain. The Brannigan Vegetative Treatment area currently meets the Dispersal Habitat Rule (DHR), as does the entire Brannigan Assessment Area. The DHR will also be maintained after harvest.

#### HOLY HOLLOW ELU

##### Sale Area and Prescribed Treatment

The Holy Hollow Ecological Land Unit (ELU) is located in the North Kaibab Ranger District of the Kaibab National Forest. According to a December 17, 1993, decision notice, a combination of alternatives 2, 3, and 4, with a modification to not perform vegetative treatments in suitable owl habitat, was selected for implementation in the ELU. The ELU contains approximately 14,690 acres and is within the Grand Canyon National Game Preserve.

The combined alternatives would result in: construction of fences around 8 earthen tanks and application of bentonite to 4 earthen tanks; retention of 3-5 reserve trees in regeneration and removal treatments; and seeding of shrubs and forbs on some areas. According to the Forest Service, it would also provide treatment within northern goshawk post-fledging family areas and foraging areas to move the vegetative resource closer to the desired future condition by regenerating up to 915 acres, removal cutting up to 501 acres, and commercial and pre-commercially thinning up to 12,350 acres. This alternative also maintains approximately 989 acres of fuelbreak and prescribes burning of 600 acres in allocated old growth. The selected alternative would obliterate approximately 38 miles of road, close 73 miles, and reconstruct 14.1 miles.

Proposed activities include : group selection cuts (regenerate tree groups less than 2 acres); irregular group shelterwood cuts (regenerate tree groups 2 acres and larger); final removal of irregular group shelterwood (release tree groups generally less than 4 acres); free and low thinning (remove mostly small trees below the general canopy level, and some larger trees, all species); tree planting with site preparation; grass and forb seeding with site preparation; road surface stabilization and drainage improvement and reconstruction of roads that are in unsatisfactory condition/locations; obliteration of unneeded roads; closure of roads needed only for the project implementation after use; prescribed burning in old-growth, the general forest, and woodlands; maintenance of fuelbreaks; forest fuels hazard reduction (pile and burn slash, and lop and scatter slash); creation of snags and downed woody debris from live trees.

##### MSO Habitat

According to the Forest Service, the ELU contains 160 acres of suitable nesting owl habitat in 6 parcels and none will be treated. All treatment areas were judged to be unsuitable for nesting and roosting; however, they may provide important foraging, wintering, or dispersal habitat. Dan Garcia, wildlife biologist, North Kaibab District (pers. comm. 1994) indicated that 54 acres of capable habitat that is currently fairly open, will be thinned in the project, with the objective of moving it toward suitable MSO habitat conditions. The District says that it is possible that MSO are using the side canyons off the edge of the Kaibab Plateau and occasionally foraging on the Plateau. The project design ensures that the Dispersal Habitat Rule (DHR) will be met after harvest.

The project area was surveyed for MSO from 1990-1993. In 1991, a MSO four-note call was heard in the Spring Point vicinity (SWCA Incorporated 1991, 1994). It was the field supervisor and surveyor's opinion that the hoot could have been produced by the tape player of a surveyor on another survey route. However, SWCA (1994) indicates that it is possible that the hoot was produced by a MSO in or adjacent to the survey area. There are 20 "non-confirmed" (not confirmed by a Forest Service biologist or person authorized by the Forest Service to conduct inventories) MSO observations on the North Kaibab Ranger District. The nearest of these observations is approximately 4 miles from the project area. The nearest confirmed pairs of MSO are 50 miles from the project area.

#### Peregrine Falcon Habitat

Suitable peregrine falcon habitat is proximate to the project area and to proposed treatment units. To date, this habitat has not been surveyed.

### MESA VEGETATIVE TREATMENT

#### Sale Area and Prescribed Treatment

The Mesa assessment area is located in the Chalender Ranger district of the Kaibab National Forest. According to the June 8, 1992, decision notice, the selected alternative 2 would result in vegetative treatments on 1605 acres of timber stands and 82 acres in natural grasslands. Treatments include shelterwood seed cut (158 acres), clearcut (50 acres), intermediate treatment (852 acres), selection uneven-age treatment (545 acres), pine savannah enhancement (53 acres), and control of vegetation on 29 acres of grassland. Treatment for dwarf mistletoe will occur on 815 acres. The request for formal consultation indicated that 1676 acres would be affected. The Forest Service indicated that none of that amount was suitable or capable habitat. However, the Forest Service stated that the acreage may provide foraging, wintering, or dispersal habitat.

Additional activities include: allocations of 1388 acres of old-growth and 5745 acres where potential snags will be recruited; allocation of 2 goshawk territories and 1 goshawk "concern area"; underburning on 447 acres in pine to improve forage; construction of 2 guzzlers; and improvement of waterfowl habitat near Turkey Tank.

Other activities include: closing of 10.6 miles of non-sale roads; obliteration of 7.8 miles of roads; forage seeding on 605 acres; meadow burning on 105 acres; discing or ripping 100 acres of soil; fencing off a wetland area south of Bull Basin; reconstruction (12.9 miles) and construction (1.6 miles) of roads; treatment of logging slash (780 acres of machine piling/burning, 877 acres of logging, and 26 acres of broadcast burn after log); site preparation, planting and seeding on 50 acres; site preparation for pine natural regeneration on 317 acres; pre-commercial thinning on 763 acres; sanitation thinning on 188 acres; and trailhead improvement on the Bull Basin and Pumpkin Wilderness trailheads.

#### MSO Habitat

Suitable and capable MSO habitat is present in the Mesa Assessment Area. According to the Forest Service, all proposed units occur in unsuitable habitat (ponderosa pine type). Potential foraging habitat for spotted owls either adjacent to, or proximate to suitable habitat is proposed for treatment in 12 units.

Analysis to determine if the DHR is met within the Mesa AA revealed that 25% of the analysis area currently has trees greater than 9" dbh with a canopy of 40% or more. This is a result of about four timber sales consisting of

shelterwood treatments occurring in the Analysis Area in the past 10 years (Ron Auler, wildlife biologist, Chalender Ranger District, pers. comm. 1994). As a result of the Mesa Timber Sale, the Forest Service indicated that the amount of the Analysis Area meeting the DHR will immediately increase slightly, to 26% due to treatments involving thinning from below, which will increase the average diameter of stands so treated.

The Analysis Area was surveyed for MSO in 1990 and 1992. Analysis of provided information indicates that three pieces of potentially suitable habitat were not surveyed for the MSO [Northwest Bull Basin (two parcels) and Horsethief Canyon]. Proposed treatment units are located adjacent and proximate to these areas.

A MT (#070210) has been established within the Kendrick Peak Wilderness Area to the south of the Mesa Assessment Area. This MT borders the Mesa Analysis Area. In 1992, on two occasions, a female MSO was heard outside the established MT, on the north slope of Kendrick Peak, and it is not known if this is the Kendrick Peak female.

## PARIS ELU

### Sale Area and Prescribed Treatment

The Paris ELU is located in the North Kaibab Ranger District of the Kaibab National Forest. According to a decision notice, dated June 18, 1993, the selected alternative for the ELU is a combination of alternatives 2 and 6. According to a June 18, 1993, decision notice, a combination of alternatives 2 and 6 was selected for implementation in the ELU.

The combined alternatives would result in: construction of fences around 18 earthen tanks and reconstruction of 7 springs and fences where needed; retention of 3-5 reserve trees in regeneration and removal treatments; creation of snags from the reserve trees on regeneration and removal acres where needed; and seeding of shrubs and forbs on approximately 200 acres. According to the Forest Service, treatment would also be provided within northern goshawk post-fledgling family areas and foraging areas to move the vegetative resource closer to the desired future condition by regenerating up to 860 acres, removal cutting up to 315 acres, and commercial and non-commercial thinning approximately 7,523 acres. This alternative also maintains approximately 786 acres of fuelbreak and prescribes burning of 600 acres in allocated old growth. The selected alternative would also: thin noncommercial species at six scenic viewpoints; provide interpretative signing; establish a wildlife road closure area; obliterate 15 miles of road and reconstruct 17.6 miles; and regenerate 100 acres of pure aspen through aspen clone removal. A total of 8,698 acres are proposed for treatment.

### MSO Habitat

This project includes proposed treatments in 500 acres of suitable nesting habitat and 151 acres of capable MSO habitat. According to the Forest Service, many MSO have been detected on the Kaibab Plateau but none have been confirmed. Through aerial photo interpretation, approximately 1500 acres of habitat have been identified in small pieces as potential foraging habitat within the Paris ELU. These areas are scattered and mostly small acreages on the north aspect of steep drainages. There is a large percentage that is located within allocated old growth and on steep slopes. The Forest Service stated the ELU will be managed for potential foraging habitat and will not violate the DHR. The project area currently meets or exceeds the DHR (Garcia, North Kaibab District, pers. comm. 1994).

The Paris ELU was surveyed for MSO in 1990-1992. No owls were confirmed in the ELU, but on two occasions in 1991, surveyors heard the hoots of MSO. It was the field supervisor and surveyor's opinion that these were the calls produced by the tape player of a surveyor on another survey route, but SWCA (1994) does state that it is possible that the calls were produced by MSO in or adjacent to the survey areas. The nearest known breeding MSOs are more than 50 miles away located on the south rim of the Grand Canyon and to the north in Zion National Park. There are five "unconfirmed" vocalizations of MSO proximate (1.5 to 4 miles) to the sale area, in the proximity of Brown's Canyon and Quaking Aspen Canyon. The Forest Service originally made a determination of no affect with a revised determination of may affect, not likely to adversely affect the MSO.

#### Peregrine Falcon Habitat

Suitable peregrine falcon habitat is present in close proximity to the project area and proposed treatment units. To date, this habitat has not been surveyed.

#### JACKS/BUCK MOUNTAIN 20K

##### Sale Area and Prescribed Treatment

The Jacks/Buck Mountain Analysis Area contains approximately 21,737 acres on the Long Valley Ranger District of the Coconino National Forest. The District proposes timber harvest treatment on 5206 acres and prescribed burning on 3055 acres. Harvest activities would include intermediate thinning from below (TFB), intermediate TFB/sanitation, group shelterwood seed cuts, and precommercial thinning. The group shelterwood seed cuts are proposed for sites heavily infected with dwarf mistletoe. Trees with a dbh of 18 inches and larger will be harvested within the sites proposed for group shelterwood seedcuts, intermediate thin from below (TFB), and the intermediate TFBs, sanitation treatments. Except for 32 acres (location 616/Site 5), harvest treatments are not planned within sites classified as having a closed canopy (60% or greater crown closures). Six hundred thirty-six (636) acres of the prescribed burning is proposed within harvest treatment acres.

In addition, this project includes the fencing of Bansfield and Quanimptewa Springs, closure and obliteration of 14.6 miles of existing roads, harvest of an estimated 7.5 million board feet of ponderosa pine roundwood and pulpwood, and precommercial thinning of sapling stands on 418 acres.

##### MSO Habitat

Suitable and capable MSO habitat is present in the 20K area. No suitable MSO nesting habitat will be treated. Capable habitat totaling 1,676 acres will be treated, and 43 acres of suitable MSO habitat is scheduled for prescribed burning.

The 20K area was surveyed for MSO in 1990-1993. During the 1992 survey effort, a nighttime auditory and visual observation of a male MSO was made in the Buck Mountain portion of the analysis area. Daytime Follow-up surveys in 1992 and 1993 did not locate this MSO again. A MT was not established because the biologist made a determination that this owl was a "floater", namely, not a resident owl.

A portion of the Jacks Canyon MT falls within Jacks 10K (450 acres). No treatment is proposed within this MT. Currently, 73% of the 20K analysis area meets the DHR. After harvest, 50% of the 20K analysis area will meet the DHR. The Forest Service has determined that the project may affect, but is not likely to adversely affect, the MSO or its habitat.



## PINE CANYON CAMPGROUND

### Project Area and Proposed Action

The Pine Canyon Campground project proposes 80-100 campsites on 85 acres on the Coconino National Forest, Long Valley Ranger District. Four alternative sites were also considered (Mark Whitney, Coconino National Forest, pers. comm. 1994). The proposed campground is located on several benches above the north rim of Pine Canyon, encompasses the Pine Canyon Trailhead, and is adjacent to Highway 87. The proposed campground will require select tree removal and building of one mile of road, as well as drilling a well, and construction of toilets, a storage tank, and perhaps a ramada for group activities. Construction is planned between May and November over a two year period.

The project area currently receives a very small amount of dispersed camping during the hunting season. The proposed campground is estimated to have 50,000 visitors per year (May 1 - October 31) (Mike Howard, Coconino National Forest, pers. comm. 1994). The Pine Canyon Trail currently receives approximately 5,000 visitors per year. This is expected to increase to 10,000 visitors per year (80% of these between June 1 and August 15) with construction of the campground (Howard, Coconino National Forest, pers. comm. 1994).

### MSO Habitat

The proposed campground project is located within the Pine Canyon MSO Management Territory (MT) (#120413), which is also partially in the Tonto National Forest. Attempts at locating the owls from the northern edge of the canyon within the project area in 1992 and 1993 as part of the survey for the Baker 10K have been unsuccessful and use of the project area by this pair is unknown at this time. The project area is located within unsuitable habitat, but is adjacent to suitable habitat located in the drainage to the east of the project area (Whitney, Coconino National Forest, pers. comm. 1994). The Pine Canyon Trail which is located within the MT and core area, comes as close as 1/4 mile from the nest site at several of the trail switchbacks.

### Peregrine Falcon Habitat

Suitable peregrine falcon habitat is present in Pine Canyon which has not been surveyed. There are known breeding sites nearby and spacing indicates that occupancy can be expected in the vicinity of the proposed project.

## BACKGROUND AND STATUS

Background and status information on the MSO has been described in the Final Rule listing the Mexican spotted owl as a threatened species (58 FR 14248-14271; March 16, 1993), and previous biological opinions delivered to Region 3 of the U.S. Forest Service on August 23, 1993 and October 8, 1993. The information provided in those documents is included herein by reference.

### ENVIRONMENTAL BASELINE - MEXICAN SPOTTED OWL

The number of known locations of owls in forests in Region 3, together with mean suitable, capable and total MT acreage is presented by forest in Table 4 (based on published Forest Service records). Current estimates of total acreage in suitable and capable habitat are listed by forest in Table 5.

Table 4. Distribution of established management territories (MTs) by forests, and mean acreage of suitable and capable habitat per MT.

Forest	MTs	Suitable	Capable	Total
Apache-Sitgreaves	89	1007	303	1884
Carson	3	1172	218	2010
Cibola	29	1250	71	1722
Coconino	124	943	645	2129
Coronado	97	861	408	1882
Gila	147	893	731	2066
Kaibab	4	1490	275	2559
Lincoln	114	1331	595	2075
Prescott	10	1378	393	1821
Santa Fe	32	1633	451	2344
Tonto	49	897	56	2187
Total	698			
Overall mean acres		1043	497	2034

The Forest Service inventories through 1990 resulted in the establishment of 517 owl MTs in Arizona and New Mexico with each MT representing the occurrence of either a single owl or pair of owls. Approximately half the MTs were established from confirmed nest or roost localities; the other half were established only from night calling responses. On lands unavailable for timber harvest, only 30% of the MTs were established from confirmed nest or roost localities. In 1990 there were 318 MTs (61%) on lands available for timber harvest and 199 MTs (39%) on lands not available for timber harvest. Among the MTs on lands not available for timber harvest, 102 were on lands unsuitable for timber harvest, 39 were on lands withdrawn from timber harvest, and 58 were on reserved lands such as wilderness areas (Fletcher 1990). The Forest Service reported 691 MTs for Arizona and New Mexico National Forests as of 1993, but provided no new information about the area inventoried or distribution of owl MTs by types of land use. As of this date, the Forest Service has reported 698 MTs for the forests of Arizona and New Mexico.

The Forest Service began owl inventories in New Mexico and Arizona in 1988. Inventories in Colorado and Utah began in 1990. As of 1990, just over 2,000,000 acres had been inventoried (Fletcher 1990; Forest Service, Pike and San Isabel National Forest, *in litt.*, 1990). Approximately 70% of the surveys were on lands available for timber harvest.

Table 5. Acreage of suitable and capable habitat on Region 3 National Forests (Data from Henson 1993, *in litt.*)

Forest	Suitable <sup>1</sup>	Surveyed	Capable <sup>1</sup>	Converted <sup>2</sup>	% <sup>3</sup>	Estim. take
A-S <sup>4</sup>	258,000	194,000	100,000	730	28	5
Carson	250,000	148,000	42,000	1751	15	
Cibola	172,000	63,000	83,000	183	33	
Coconino	356,000	167,000	170,000	2059	33	12
Coronado	107,000	78,000	22,000	27	17	4
Gila	619,000	225,000	342,000	584	36	5
Kaibab	63,000	60,000	19,000	38	23	
Lincoln	371,000	267,000	24,000	634	6	
Prescott	133,000	10,000	53,000	73	29	
Santa Fe	476,000	110,000	157,000	142	25	1
Tonto	317,000	182,000	25,000	177	7	6
	3,122,000	1,504,000	1,037,000	6,398	25 <sup>3</sup>	33

<sup>1</sup> Prior to April 14, 1993 request for formal consultation.

- 2 Proposed treatments in previous requests for formal consultation. These figures reflect the assumption that all suitable acres subjected to timber harvest will be converted to capable. These figures are based on information submitted with the individual requests for formal consultation from the Forest Service. Not all of the suitable acreage identified as being affected in the requests is included in these figures because some treatments (e.g., prescribed burns) are not expected to degrade suitable habitat to capable condition.
  - 3 Percent of formerly suitable habitat that is now capable with the addition of the implementation of the actions in the previous requests for formal consultation.
  - 4 Apache-Sitgreaves.
  - 5 Percent of the total suitable habitat converted to capable.
- 

## ENVIRONMENTAL BASELINE - PEREGRINE FALCON

### BACKGROUND INFORMATION

#### Species Description-Peregrine Falcon

The peregrine falcon was listed as an endangered species on October 13, 1970 (35 FR 16047). No critical habitat has been designated for this species. The peregrine falcon is a medium-sized raptor with various subspecies distributed worldwide. The American peregrine falcon occurs across much of North America. The peregrine falcon tends to nest on cliffs near sources of avian prey. The peregrine falcon has traditionally been strongly associated with cliffs near large bodies of water such as seacoasts, lakes and large rivers (Ratcliffe 1980). However, the arid American southwest has recently been demonstrated to not only support breeding peregrines but to support the largest concentration of them known in North America, excluding Alaska. Studies have documented high densities of breeding pairs in the Southwest, particularly the Colorado Plateau (Burnham and Enderson 1987, Hays and Tibbitts 1987, Tibbitts and Bibles 1990, Brown 1991). Local concentrations of nesting pairs have also been documented in the mountains of southeastern Arizona (Tibbitts and D. Ward 1990a and 1990b, Berner and Mannan 1992, L. Ward 1993).

In the Southwest, breeding peregrines are currently found almost anywhere large [approximately  $\geq 100$  meters (m)] cliffs are available, with the exception of the hottest and driest desert regions (Tibbitts and D. Ward 1990a, L. Ward 1993, Service unpubl. data). Large cliffs overlooking chaparral, pinyon-juniper woodland, conifer forest, and riparian habitats apparently provide high-quality habitat. These cliffs are currently occupied by breeding pairs almost wherever they occur in Arizona and southern Utah, even where surface water may be many miles distant. Even in the Sonoran desert, peregrine falcons may be found breeding where perennial surface water and associated riparian prey populations are available.

#### Environmental Baseline-Peregrine Falcon

The American peregrine falcon appears to be making considerable progress toward recovery through much of its range. Recovery appears to be greatest in the Colorado Plateau of southern Utah, southwest Colorado and northern Arizona, and in adjacent habitats in Arizona, Utah and Colorado. Recovery in this region is inferred from high total numbers of breeding pairs, high rates of site occupancy and high reproductive success (Burnham and Enderson 1987, Enderson et al. 1991, Tibbitts and Bibles 1990, Tibbitts and D. Ward 1990a and 1990b, L. Ward 1993).

In Arizona, approximately 180 occupied breeding sites have been identified in surveys from 1988 through 1992 [Laurie Ward, Arizona Game and Fish Department (AGFD), pers. comm.]. Peregrine falcons have recovered sufficiently that the Service is currently considering reclassification of the species under the Act.

## EFFECTS OF THE PROPOSED ACTION ON LISTED SPECIES

### EFFECTS OF FOREST ACTIVITIES - MEXICAN SPOTTED OWL

Effects of forest activities on the Mexican spotted owl such as timber harvest, livestock grazing, land exchanges, campground construction, and prescribed burning have been described in the Final Rule listing the Mexican spotted owl as a threatened species (58 FR 14248-14271; March 16, 1993), and previous biological opinions delivered to Region 3 of the U.S. Forest Service on August 23, 1993, October 8, 1993, and December 14, 1993. That information is included by reference.

### Long-term Conservation Planning

The long-term conservation planning information on the Mexican spotted owl has been described in the Final Rule listing the Mexican spotted owl as a threatened species (58 FR 14248-14271; March 16, 1993), and previous biological opinions delivered to Region 3 of the U.S. Forest Service on August 23, October 8, and December 14, 1993, and is included in this biological opinion by reference.

### INTERRELATED AND INTERDEPENDENT ACTIONS

Interrelated actions are actions that are part of a larger action, and are dependent on the larger action for their justification. Examples of activities in Region 3 that are interrelated to the projects considered in this consultation package are road maintenance and construction, development of skid trails and loading areas, stream crossing, road closures and precommercial thinning.

Interdependent actions are actions that have no independent utility apart from the action under construction. Examples of interdependent actions include slash treatments and certain fuel management practices such as lop and scatter, machine piling, and controlled burning. In some cases, fuel management projects are implemented independent of other projects.

### INDIRECT EFFECTS

Indirect effects are those that are caused by, or result from, the proposed action, and are later in time, but reasonably certain to occur. The most significant indirect effect that is expected to result from these projects will be increased access. Recreation activities that can be reasonably expected to increase are sight-seeing, off-road-vehicle travel, and hunting. These are all forms of diffused recreation. Wood gathering and cutting may also occur in newly accessible areas. Uncontrolled gathering of snags and downed wood for fuel may have negative impacts on owl prey species. Increased predation may also result because of habitat modifications. The increased predation may be either a direct or indirect effect of the proposed action.

### CUMULATIVE EFFECTS

Cumulative effects are those effects of future non-federal (State, local government, or private) activities on endangered or threatened species or critical habitat that are reasonably certain to occur in the foreseeable future. Future Federal actions are subject to the consultation requirements established in section 7 of the Act, and, therefore, are not considered cumulative in the proposed action. Because of the predominant occurrence of the owls on Federal lands, and because of the role of the respective Federal agencies in administering the habitat of the owl, actions to be implemented in the future by non-federal entities on non-federal lands are considered of minor impact.

### SUMMARY OF EFFECTS - MEXICAN SPOTTED OWL AND PEREGRINE FALCON

#### BRANNIGAN VEGETATIVE TREATMENT

The Brannigan Vegetative Treatment Sale Area contains 37 acres of suitable/capable mixed conifer MSO habitat located on the north side of Forty-niner Hill which has not been surveyed for MSO. This small area may provide habitat for a resident owl or pair, or refuge for dispersing juveniles and adults. There are presently examples of MSO pairs and singles using small habitat patches such as this on other forests. Because this suitable habitat has not been surveyed, the Service assumes it is occupied. In addition, suitable habitat is present in this project area which supports adequate oak in conjunction with ponderosa pine to provide suitable and/or capable habitat for the MSO. Neither the mixed conifer or the pine/oak habitat has been surveyed. The Forest Service's Interim Directive No. 2 states that inventory should include all suitable owl habitat found within and around the proposed management activity for a period of two years.

Portions of five proposed harvest units (30, 31, 32, 39, and 40) are located within 0.25 miles of the identified suitable mixed conifer habitat on Forty-niner Hill. Eleven proposed harvest units (27, 28, 34, 35, 36, 37, 38, 39, 40, 41, 43) contain suitable pine/oak habitat within and/or adjacent to them. The risk involved with conducting timber harvest action within and proximate to unsurveyed suitable habitat is considered significant. The harvest activity may affect unknown MSO through disturbance during the reproductive period which can cause abandonment of nest sites and subsequent loss of reproductive success. In addition, the lack of survey in this suitable habitat does not follow the guidelines of Forest Service Interim Directive No. 2, which the Service has assumed to be the direction for all Forests.

#### HOLY HOLLOW ELU

The Holy Hollow ELU is located on the Kaibab Plateau. Little is known about the use of the Plateau for nesting, dispersing and foraging by MSO. The biological assessment and evaluation states that it is possible that MSO are using the side canyons off the edge of the Plateau and occasionally foraging on the Plateau. The Plateau should be maintained at a minimum of at least those conditions described in the DHR to provide the necessary habitat for dispersing and foraging owls. The Forest indicates that implementation of the goshawk guidelines will provide for these dispersal habitat characteristics in this sale area and on the entire District.

The DHR is meant to maintain a minimum condition for MSO dispersal. The Service does not recommend that the landscape be brought down to those minimum DHR conditions via the goshawk guidelines. The assumption that the goshawk guidelines provide adequate management for the MSO is not supported.

The Service has concerns regarding effects to MSO habitat through implementation of the goshawk guidelines. The guidelines recommend treatment of goshawk foraging areas over a large portion of the landscape in a manner where the desired condition is an open understory. Such a condition provides for goshawk prey habitat and is conducive to the capture of this prey by goshawks because of the nature of the single canopy. Management for this single canopy over a large portion of the landscape does not benefit the MSO because such a forest will not provide the multi-layered canopy condition and structural component that is a requirement for the owl. Management for the goshawk through implementation of the goshawk guidelines may degrade MSO habitat and should not be considered beneficial in all cases.

Areas adjacent to the edge of the Plateau, particularly where the oak is fairly prevalent, may provide important habitat for owls foraging in the canyons and on the Plateau. This seems likely based on the number of "non-confirmed" sightings of MSO on the Plateau in the vicinity of the sale area, and the possible MSO heard in the Spring Point vicinity in 1991. Treatment of the pine/oak type in these areas is of concern.

Sale maps indicate that prescribed burning of ponderosa pine old growth is planned within capable habitat in the northeast portion of the sale area. Burning in this potential foraging habitat has the potential to remove down woody material which is important to maintain as habitat for MSO prey species.

Unsurveyed suitable habitat for the peregrine falcon is present along the rim adjacent to the sale area and, therefore, the Service assumes it is occupied. Harvest activities within 0.50 miles of this habitat during the breeding season may cause disturbance and nest failure to any falcons in this vicinity.

#### MESA VEGETATIVE TREATMENT

The Mesa Assessment Area currently contains only 25% of the vegetation in a condition that meets the DHR due to past harvest activities. Maintenance of at least 50% of the analysis area in a condition meeting the DHR is considered a minimum to provide an adequate amount of canopy cover for dispersing adults and juvenile MSO. Treatments such as the clearcut and shelterwood seed cuts proposed will further reduce the canopy cover in these stands to below 40%, thus potentially reducing the overall acreage that meets the minimum requirements of the DHR.

There are three parcels of unsurveyed suitable habitat within the sale area, and two of these areas have proposed harvest units adjacent to them. The risk involved with conducting timber harvest action proximate to unsurveyed suitable habitat is considered significant. The harvest activity may affect unknown MSO in this habitat through disturbance during the reproductive period which can cause abandonment of nest sites and subsequent loss of reproductive success.

A single female has been both seen and heard in 1992 on two different occasions outside the established Kendrick Peak MT (#070210) on the north slope of Kendrick Peak. The amendment to the biological evaluation states that there is no conclusive proof of the existence of two females despite attempts to locate both simultaneously. The 1992 MSO survey report indicates that attempts to locate two females on the Peak were inconclusive, and that it is possible that two females are present on Kendrick Peak. The Service does not believe that it has been shown that there is not an additional female using habitat outside the established MT. According to Forest Service Interim Directive No. 2 occupancy classification, observation of a single spotted owl during a nighttime field outing by a Forest Service biologist or person authorized by the Forest Service to conduct inventories, constitutes a confirmed single. Discussions with Keith Fletcher from USFS Region 3 (pers.

comm. April 18, 1994) indicate that a nighttime observation of a MSO to determine occupancy as specified in I.D. No. 2, is not as accurate as a daytime observation. Fletcher notes that establishment of a MT in the case where only a nighttime observation has occurred, as indicated in I.D. No. 2, is at the discretion of the biologist, and may not be necessary in all occasions. I. D. No. 2 has not been modified to show this "new direction". The Service's concern in this case is the discrepancies between the District's biological evaluation and the 1992 MSO survey report in determination of the existence of another female MSO on Kendrick Peak.

Treatment of dwarf mistletoe and sanitation thinning as proposed may remove or lessen the potential for future recruitment snags and down woody material which provides habitat for MSO prey species. Shelterwood cuts adjacent to suitable habitat as proposed may remove potentially important cover for foraging MSO.

#### PARIS ELU

The Paris ELU is located on the Kaibab Plateau just south of the Holy Hollow ELU. The Plateau should be maintained at a minimum of at least those described in the DHR to provide the necessary habitat for dispersing and foraging owls. The Forest says that implementation of the goshawk guidelines will provide for these dispersal habitat characteristics in this sale area and on the entire District.

The DHR is meant to maintain a minimum condition for MSO dispersal. The Service does not recommend that the landscape be brought down to those minimum DHR conditions via the goshawk guidelines. The assumption that the goshawk guidelines provide adequate management for the MSO is not supported.

As stated for the Holy Hollow ELU project, the Service has concerns regarding effects to MSO habitat through implementation of the goshawk guidelines. The guidelines recommend treatment of goshawk foraging areas over a large portion of the landscape in a manner where the desired condition is an open understory. This condition provides for goshawk prey habitat and is conducive to the capture of this prey by goshawks because of the nature of the single canopy. Management for this single canopy over a large portion of the landscape does not benefit the MSO because such a forest will not provide the multi-layered canopy condition and structural component that is a requirement for the owl. Management for the goshawk through implementation of the goshawk guidelines may degrade MSO habitat and should not be considered beneficial in all cases.

Areas adjacent to the edge of the Plateau, particularly where the oak is fairly prevalent, may provide important habitat for owls foraging in the canyons and on the Plateau. This seems likely based on the number of "non-confirmed" sightings of MSO on the Plateau in the vicinity of the sale area, and the possible MSOs heard in the sale area in 1991. Treatment of the pine/oak type in these areas is of concern.

Treatment of suitable habitat as proposed has the potential to remove habitat that may provide important refugia for dispersing and foraging owls on the Plateau. It seems very evident that owls are using the Plateau to some extent despite the fact that the many vocalizations heard by the Arizona Game and Fish Department and others in the vicinity of the sale area have yet to be confirmed by a Forest Service biologist. The present suitable habitat is important to retain. Treatment of capable habitat is not recommended unless it can be shown to move the habitat towards suitability.

In addition, the Service is concerned with the quality of MSO surveys completed for this project. The conclusion that surveyors were hearing each other and not an owl on two occasions in 1991 within the project area is

unsubstantiated by the provided data. All possible attempts should be made to lessen the possibility that surveyors are hearing each other by ensuring that they are spaced away from each other and/or required to use radios. In addition, attempts should be made to locate and identify single MSOs and the habitat they are using on the Plateau. As stated previously, it is evident that MSO are using the Plateau for foraging at a minimum, and at this point it should not be assumed that MSO are not using habitat on the Plateau for nesting.

Sale maps indicate that prescribed burning in ponderosa pine old growth is planned within capable habitat in the sale area. Burning in this potential foraging habitat has the potential to remove down woody material which is important to maintain as habitat for MSO prey species.

Unsurveyed suitable habitat for the peregrine falcon is present along the rim adjacent to the sale area and therefore, the Service assumes it is occupied. Harvest activities within 0.50 miles of this habitat during the breeding season may cause disturbance and nest failure to any falcons in this vicinity.

#### JACKS/BUCK MOUNTAIN 20K

A single MSO was located within the Buck Analysis Area in 1992. This owl was not found again during a daytime follow-up visit or during surveys in 1993. A MT was not established for this single based on the biologist's opinion that this was a "floater" owl. Sale maps indicate that the single MSO was located in habitat classified as capable. The concern is with the proposed treatments in this area. Proposed treatments in the immediate vicinity where the owl was located are shelterwood cuts totalling 57 acres. Shelterwood harvest may negatively affect habitat important to this single MSO.

Treatment of capable habitat should only move such habitat towards suitability. Shelterwood harvest as proposed in capable habitat will move this habitat away from reaching suitability in the near future.

The DHR is meant to maintain a minimum condition for MSO dispersal. The Service does not recommend that the landscape be brought down to those minimum DHR conditions.

Prescribed burning is planned within suitable habitat in the sale area. Burning has the potential to cause loss of the stand or its multiple canopies as well as to remove down woody material which is important to maintain as habitat for MSO prey species. Extreme care should be taken not to lose these important habitat characteristics.

#### PINE CANYON CAMPGROUND

The Service has three concerns. Past biological opinions have identified that take is considered likely if suitable habitat within a MT exists below the mean for the specific National Forest, or 1,000 acres, whichever is greater, and a sizable area within the territory is to be subjected to treatments that will degrade owl habitat characteristics in that area. The Pine Canyon MT contains 825 acres of suitable habitat, far below the 1,000 acre target, and construction of this campground will effectively remove 85 acres of potential foraging habitat, and through disturbance, may lessen the potential use of the suitable habitat adjacent and east of the proposed campground.

The second concern is the Pine Canyon Trail. This trail originates at the proposed campground location and proceeds off the rim and continues down into Pine Canyon and the MT core area. The trail comes within 1/4 mile of the existing nest site at several of the trail switchbacks. Despite the fact that



the trail is separated from the nest site by a canyon and dense vegetation, the biological assessment and evaluation for this project indicates that increased use of the trail is expected and may cause disturbance to nesting and roosting owls. Discussions with Coconino National Forest personnel have indicated that trail use is expected to increase from its current level of approximately 5,000 visits per year to 10,000 visits per year (80% of these between June 1 and August 15) (Howard, Coconino National Forest, pers. comm. 1994). This is a 100% increase in use over a two-year period of time.

The third concern is the increased use and subsequent possibility for long-term disturbance to the MSO pair from campground users on the rim. Although the proposed campground is outside the core area, the effects of disturbance by 50,000 campers over a 6-month period for an undetermined duration into the future on the adjacent suitable and foraging habitat on the rim, where there was previously almost no activity, is unknown and difficult to quantify, but disturbance is likely. How this activity may affect the foraging ability of MSO in this area is unknown. The Service does not recommend development of a campground of this size in an established MT.

The permanent development of a site within close proximity to suitable nesting peregrine falcon habitat may result in permanent loss of this habitat for nesting falcons.

#### INCIDENTAL TAKE

Section 9 of the Act, as amended, prohibits taking (harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct) of listed species of fish and wildlife without a special exemption. Harass is further defined as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent to significantly disrupt normal behavior patterns. Normal behavior patterns include, but are not limited to, breeding, feeding and sheltering. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Under the terms of section 7(b)(4) and section 7(0)(2), taking that is incidental to, and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the incidental take statement. The measures described below are nondiscretionary and must be undertaken by the agency or made a binding condition of any grant or permit issued to the applicant, as appropriate.

For the purpose of clarity, the incidental take statements for the Mexican spotted owl and the peregrine falcon have been separated.

#### INCIDENTAL TAKE - MEXICAN SPOTTED OWL

For the purposes of consideration of incidental take of Mexican spotted owls by the proposed projects now under consultation, incidental take can be broadly defined as either the direct mortality of individual birds, or the alteration of habitat that affects the behavior of the birds in a manner that essential activities such as breeding or foraging are impeded to such a degree that the birds are considered "taken." They may fail to breed, fail to successfully rear young due to inadequate food supplies available in altered habitat, or desert the area because of disturbance when habitat no longer meets the owls' needs.

For the minimization of incidental take through habitat modification, the basic management unit established by the Forest Service for the Mexican spotted owl, the MT, has been used. Based on a standardized survey protocol,

the Forest Service has delineated Management Territories which serve to identify known areas of occupancy by the owls. Using those territories, and the available information concerning habitat classification identified by the Forest Service, the Fish and Wildlife Service has identified conditions of probable or likely take for those occupied sites.

Take is considered likely for the Mexican spotted owl as a result of the following:

Actions in or adjacent to suitable habitat that has not been surveyed to the established protocol as determined by Region 3 of the Forest Service. The Service considers this habitat to be occupied.

Actions in suitable habitat in established MTs if suitable habitat exists at, or is reduced to, levels less than the mean acreage of suitable habitat within MTs for each specific National Forest included in this Biological Opinion, or 1,000 acres, whichever is greater.

More than 10% of suitable habitat within a MT is converted from suitable to capable. This condition reflects our uncertainty about the needs of individual owls. If owl home range sizes vary because of differences in habitat quality, and owls do not have excess suitable habitat within territories, eliminating any acreage of suitable habitat might result in take. We believe the 10% criterion is reasonable.

Suitable habitat within a MT exists below the mean for the specific National Forest, or 1,000 acres, whichever is greater, and a sizable area within the territory is to be subjected to treatment that will degrade owl habitat characteristics in that area.

The existing condition of an analysis area is less than those characteristic of the DHR, and/or habitat modifications outside Management Territories result in conditions less than those characteristic of the "Dispersal Habitat Rule."

Proposed actions are located within 1/4 mile of unsurveyed suitable habitat, or within 1/4 mile of a nest tree during breeding season, or, if the nest site is unknown, within 1/4 mile of a MT core area.

Over and above all the reasonable and prudent measures and attendant terms and conditions listed below, it is assumed by the Service that activities on National Forest lands will continue to be planned and conducted in accordance with the Forest Service's Interim Directive No. 2. Although the Service does not believe that reliance on the Interim Directive alone will conserve the MSO, we believe its implementation will serve, in conjunction with the reasonable and prudent measures, to minimize incidental take of the MSO by the actions currently under consideration for this Biological Opinion. The conditions required by Interim Directive No. 2 are detailed in biological opinions of the effects of Forest Service projects on the Mexican spotted owl delivered to Region 3 of the Forest Service on August 23, October 8, and December 14, 1993, and are included here by reference.

#### Occurrence of Take

The Service anticipates that Mexican spotted owls could be taken as a result of this proposed action. The incidental take is expected to be in the form of harassment and harm due to disruption of normal reproductive behavior and habitat modification or degradation.

## Reasonable and Prudent Measures -- Terms and Conditions

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the incidental take of owls anticipated for the five projects listed above. In order to be exempt from the take prohibitions of section 9 of the Act, the Forest Service must comply with the mandatory terms and conditions listed under the measures to which they apply.

As set forth in 50 CFR Part 402.14 (i)(3), in order to monitor the impacts of incidental take, the Forest Service or any applicant must report the progress of the action and its impact on the owl to the Service as specified in the incidental take statement.

The Forest Service shall provide on-site review and direction to ensure that no direct mortalities of owls will occur. MT #120413 should be formally monitored to determine the effects of the campground development and use. The Forest Service will also assess post-harvest vegetative characteristics to determine if predicted conditions were achieved for maintenance of the DHR. Consultation should be reinitiated if any previously unknown spotted owls are located within or in close proximity to the project areas (within 0.25 miles of proposed action where disturbance may occur, or where use of the project area by the owl(s) is possible).

## Reasonable and Prudent Measures and Terms and Conditions:

1. Conduct all proposed actions in a manner that will minimize direct mortalities and disturbance to owls.

- 1.1 The projects will not exceed treatment limits and will meet the minimum habitat requirements of the Forest Service Interim Directive No. 2 for owls.

- 1.2 No silvicultural treatments or construction activity will be conducted within 0.25 miles of unsurveyed suitable habitat within established MTs, within 0.25 miles of a known nest site, or within 0.25 miles of a core area when the nest site is undetermined during the breeding season (February 1 - August 31).

- 1.3 Development of the Pine Canyon Campground may be built only to the extent that the current use of the Pine Canyon Trail (measured as visits per year) by recreationists in the MT core area during the breeding season is not exceeded. Alternatively, the Pine Canyon Campground proposed site can be moved to one of the alternative sites, or the Pine Canyon Trail can be closed during the nesting season or relocated so as to be outside the MT core area.

2. Conduct all proposed actions in a manner that will minimize modification and loss of owl habitat, which may result in harm or harassment to the owl.

- 2.1 All unsurveyed suitable habitat identified within and adjacent to the sale area (Brannigan, Mesa) must be surveyed to Forest Service protocol of 2 years before treatment can occur within that sale area. If an owl is located within or proximate to the sale area, a MT will be established and Terms and Conditions in 2.7 will be applied to these established MTs if harvest within them is desired.

OR, ALTERNATIVELY, for Brannigan TS, unsurveyed suitable habitat will be considered occupied and a MT will be established applying the recommended acreages of suitable and next best habitat. If proposed treatment units meet the characteristics for inclusion in the MT, these will be dropped from the proposed action. Terms and

Conditions in 2.7 will be applied to the established MT if harvest within it is desired. The Forest Service will provide maps showing MT location, suitable, capable and unsuitable habitat acres figures, and any deleted treatment units. For Mesa TS, unsurveyed suitable habitat will be considered occupied and all treatment within 1/4 mile of the suitable habitat will be restricted during the breeding season (February 1 - August 31).

2.2 For the Mesa Timber Sale, if surveys are not completed on the unsurveyed habitat prior to treatment, treatment within 1/10 mile of this unsurveyed habitat will be dropped.

2.3 At a minimum, the guidelines in I.D. No. 2 should be followed in determining when to establish a MT. As stated, a MT should be established if a confirmed single, confirmed pair, or inferred pair are found, as defined in I.D. No. 2.

2.3.a Establish a MT for the confirmed single located on the north slope of Kendrick Peak, adjacent to the Mesa TS. Suitable and the next best habitat should be identified to meet the required acreage.

2.3.b For the sale for which the above term and condition applies, the Forest Service will provide maps showing MT location, suitable, capable and unsuitable habitat acre figures, and any deleted treatment units.

2.4 For the Jacks/Buck Mountain 20K project, modify or drop the shelterwood treatments proposed in 57 acres of capable habitat in the area where the MSO was seen and heard in 1992 (Location 599, sites 04 and 32). Modified treatments will follow as a minimum the capable habitat guidelines described in detail in Conservation Recommendation C.

2.5 For the Paris ELU project, delete treatments in the 500 acres of suitable habitat as proposed.

2.6 In order to avoid the likelihood of take of dispersing and non-territorial owls through increased vulnerability to predation and lack of foraging habitat, dispersal habitat should be maintained.

2.6.a Apply the Dispersal Habitat Rule (DHR) as modified for Arizona and New Mexico (see past biological opinions delivered to Region 3 of the U.S. Forest Service on August 23 and October 8, 1993). The conditions of DHR will be applied within the analysis area encompassing the proposed timber sale. The Service is not advocating that all stands be reduced to the minimum standard of the DHR rule. However, all habitat within an analysis area capable of supporting the DHR characteristics will be subject to these minimum leave conditions. Suitable habitat within the matrix will provide adequate cover and should be retained as suitable habitat. Capable habitat may or may not provide sufficient cover depending on leave conditions.

The Service believes that the DHR will help conserve dispersal habitat in forested zones outside management territories in New Mexico and Arizona, thereby minimizing the likelihood of take. The rule will be applied to guarantee that no treatments will degrade the forest matrix to a

condition below the DHR standard in the analysis area, and the standard will remain effective following any harvest treatment.

2.6.b Timber harvest in analysis areas that do not currently meet the DHR (Mesa TS) will occur only under the following conditions:

If a unit currently exceeds either one or both of the minimum DHR conditions of an average of 9" dbh and 40% crown cover, (as determined by one of the two methods described in past biological opinions issued to Region 3 of the U.S. Forest Service on August 23, and October 8, 1993) then treatment can only reduce the unit to the minimums of an average of 9" dbh and 40% canopy cover immediately following treatment.

If a unit currently does not meet either one or both of the DHR conditions of an average of 9" dbh and 40% crown cover and has the potential to do so, then only treatments that can be shown to move the unit toward the DHR as quickly as possible (such as thinning) are permissible.

2.7 Timber harvest or construction activity within MTs (Pine Canyon, Brannigan) will occur only after the following conditions are met:

2.7.a If an entered MT contains less than the Forest mean of suitable acres within MTs as defined in Table 3, or less than 1,000 acres, then sufficient additional acreage of the best remaining habitat, whether in proposed treatment areas or not, will be reallocated and added to the suitable habitat for that territory to reach the Forest mean, or 1,000 acres whichever is greater, and all harvest is prohibited on the sum of those acres.

2.7.b For the proposed actions for which the above term and condition applies, the Forest Service will provide maps showing which acreage was reallocated together with a description of the habitat (reallocated acres plus the existing suitable acres) to the Arizona Ecological Services State Office for concurrence prior to construction activities in the remainder of the MT.

2.7.c No harvest or construction activity will occur in suitable habitat in MTs that would bring the amount of suitable habitat below the mean number of acres of suitable habitat established for the respective Forest, or 1,000 acres, whichever is greater.

2.7.d No more than 10% of suitable habitat will be removed from any one MT.

2.8 Slash or fuels treatment, including controlled burns, will maintain sufficient dead and down material to support owl prey species. As a minimum, the guidelines contained in the March 22, 1993 Forest Service direction (reference 2670/2430) to the Forests will be followed.

The reasonable and prudent measures, with their implementing terms and conditions, are designated to minimize the impacts of the incidental take that might otherwise result from the proposed action. With implementation of these measures, the Service believes that no more than 3 Mexican spotted owls (associated with the proposed Pine Canyon Campground, Brannigan TS, and Mesa

TS) will be incidentally taken through harm or harassment by the proposed project of 6 actions addressed by this consultation. There is no expected incidental take that will result in direct mortality. Anticipated incidental take in the form of dead birds is set at 0. Because formal consultations on additional Forest Service actions are underway and will have biological opinions issued prior to the completion of the projects of this proposed action, the total of 3 Mexican spotted owls authorized by this incidental take statement will be considered deleted from the population for future analyses of the environmental baseline and status of the species.

#### Reporting Requirements

If, during the course of the action, this level of incidental take is exceeded on any scale or in aggregate, such incidental take would represent new information requiring review of the reasonable and prudent measures provided. The Federal agency must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

Upon locating a dead, injured, or sick individual of an endangered or threatened species, initial notification must be made to the nearest Fish and Wildlife Service Law Enforcement Office. Care should be taken in handling sick or injured individuals and in the preservation of specimens in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered species or preservation of biological materials from a dead animal, the finder has the responsibility to ensure that evidence associated with the specimen is not unnecessarily disturbed. In Arizona, contact (602/379-6443) or the Arizona State Office (602/379-4720).

#### INCIDENTAL TAKE - PEREGRINE FALCON

The Service anticipates that the proposed Holy Hollow and Paris Timber Sales and the proposed Pine Canyon Campground may result in incidental take of peregrine falcons. Take may result as follows:

1. Harm (disturbance) resulting in reduced reproduction for the breeding year during which the project takes place.
2. Harm (disturbance) causing abandonment of the breeding site for the breeding year during which the project takes place.

If, during the course of the action, the incidental take limit is exceeded, the Forest Service must reinitiate consultation with the Service immediately to avoid violation of Section 9. Operations must be stopped in the interim period between the initiation and completion of the new consultation if it is determined that the impact of the additional taking will cause an irreversible and adverse impact on the species. The Forest Service should provide an explanation of the causes of the taking.

#### Reasonable and Prudent Measures - Peregrine Falcon

The Service believes the following reasonable and prudent measures are necessary to minimize the incidental taking of peregrine falcons from the three above mentioned projects. The incidental take statement provided in this opinion satisfies the requirements of the Endangered Species Act, as amended. This statement does not constitute an authorization for take of listed migratory birds under the Migratory Bird Treaty Act or any other Federal statute.

1. Conduct or fund surveys of suitable peregrine falcon nesting habitat. This monitoring effort should document the effects of project activities on peregrine falcons.

2. Conduct no project-related activities (e.g. timber harvest, skidding, etc.) within one-half mile of suitable nesting habitat, during the peregrine falcon nesting season (March 15- June 30, annually).

Terms and Conditions:

For #1:

- Use the AGFD peregrine falcon survey protocol to survey the project area. This protocol, defines methods and timing of peregrine falcon surveying.
- Monitor any peregrine falcon breeding areas to determine reproductive success, using the established AGFD monitoring protocol, which defines the number and timing of monitoring visits.

For #2:

- In accordance with recommendations in the 1982 Peregrine falcon Recovery Plan, conduct no potentially intrusive project-related activities (e.g. timber harvest, skidding, etc.) within one-half mile of suitable nesting habitat, during the peregrine falcon nesting season (March 15- June 30, annually).

#### CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The term "conservation recommendation" has been defined as Service suggestions regarding discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's section 7(a)(1) responsibility for these species.

For each individual project in the Region-wide action where a particular conservation recommendation can physically be applied, it is recommended that it should be applied. Many of the recommendations will not apply to all projects, but we recommend implementing those where conditions apply. The terms and conditions provided with the reasonable and prudent measures apply specifically to sales involving take. The conservation recommendations apply to all activities.

#### CONSERVATION RECOMMENDATIONS - MEXICAN SPOTTED OWL

A. The Service recommends that a true programmatic section 7 consultation be conducted on all future proposed activities in Region 3 of the Forest Service when possible. We believe that such a programmatic overview will provide the scope of action assessment necessary to address all direct, indirect and cumulative impacts to the owl. In addition, it will identify opportunities to conserve the species on forest lands in the most effective manner. If this recommendation is too ambitious, consultation on individual forest timber programs or forest plans would also be beneficial. Consultations conducted in this manner would ensure the best long-term protection for the owl and aid the Forest Service in its planning efforts.

B. Suitable Habitat - Timber harvest treatments in suitable habitat should be deleted from the individual projects of the action.

C. Capable Habitat - Capable habitat should only receive treatments if those treatments can be shown to lead to faster return to suitability than if no treatment occurred.

The California spotted owl Technical Application Team (TAT; Verner et al. 1992) developed a strategy for treatment of habitat for California spotted owls which they believed would have minimal adverse effects on owl habitat. They "focused on setting strong rules to retain stand components that are most at risk and hardest to replace" (pp.25). The following treatment program is modified from their recommendations in an effort to retain aspects of the habitat that are most difficult to recover after they have been lost. The elements that are at greatest risk are the largest, oldest trees, and the complex stand structure. Snags and large dead wood are also important and may be at risk as well. The TAT developed a tree size profile for the relevant forests and identified the components of the forests that were most important to owls.

The TAT determined that in nesting habitat, the 40% of basal area in the largest trees should be retained, and that no trees greater than 30 inches dbh should be harvested. If there were inadequate trees in the large size class to provide 40% canopy closure. Recommendations called for adding trees in smaller size classes until 40% canopy closure was obtained. The rationale for allowing harvest in the smaller size classes was that a 30-inch tree could easily grow in 100 years or less, and so was replaceable. In addition, the 40% canopy closure in large trees was expected to provide suitable foraging habitat.

In New Mexico and Arizona, tree growth rates are slower than in the Sierra Nevada and other ranges in southern and western California. Furthermore, we do not have tree size profiles for mountain ranges in New Mexico and Arizona. The following recommendations are an attempt to blend the TAT recommendations with individual tree selection techniques that are used on some Native American timberlands in the two states.

To repeat, the goals are to retain the largest trees in the stand, to provide replacements for those trees when they die or fall, and to retain existing canopy structure. This treatment is recommended to speed the return of capable habitat to a condition suitable for owls.

Retain, but do not include in basal area calculations, all hardwoods greater than 4 inches (10 cm) dbh up to a basal area of 30 square feet. Retain the largest trees in the stand to 20 square feet of basal area (BA). In smaller size classes, try to retain 55 square feet of basal area as follows: 18 - 23.9 inch dbh = 20-25 BA; 12-17.9 inches dbh = 20-25 BA; 5-11.9 inches dbh = 10-15 BA. Retain sufficient trees less than 5 inches dbh to provide recruits into the 5-11.9 inch size class at the next entry. If trees are not available in a given size class this entry, try to mark the stands so that this size class distribution will be available at the next entry.

D. Retain the DHR conditions on habitat lying exterior to established MTs that are recognized as providing the edaphic and/or biological conditions to support the DHR.

E. Slash or fuels treatments, including controlled burns, should maintain sufficient dead and down material to support Mexican spotted owl prey species. To help insure the above, the guidelines in the March 22, 1993 Forest Service direction (Reference 2670/2430) to the forests should be followed to maintain at least the minimum leave conditions contained therein.



F. Retain sufficient small trees (1-5" dbh) in treatment units to ensure recruits for uneven-aged structure in the future.

G. Treatments should not result in loss of the number of pre-treatment canopy layers in a given stand.

H. Unsuitable habitat adjacent to suitable or capable habitat, whether occupied or not, should be retained as foraging habitat by retaining sufficient basal area, canopy cover and structure, and dead and down material.

I. Consider the following when designing and implementing timber harvest prescriptions in unsuitable nesting habitat to minimize impacts to the spotted owl and restore the necessary components of spotted owl foraging habitat:

a) Leave diseased, damaged or cull trees to provide for future recruitment of snags and down woody material. Leave sufficient snags and down woody material to provide for spotted owl prey species.

b) Encourage understory development while retaining an overstory canopy cover of 40% or more.

c) Within shelterwood harvests, leave sufficient mature trees per acre to provide the components of MSO suitable habitat.

J. Limit new road construction to the absolute minimum necessary and use the lowest standard road types. Avoid construction of new roads in suitable habitat.

K. If the Forest Service plans to develop new guidelines to replace I.D. No. 2, we recommend that such guidelines address management beyond established Management Territories. The Forest Service may want to initiate programmatic consultation on proposed or revised guidelines.

L. Mexican spotted owls have not been detected in some areas that contain apparently suitable Mexican spotted owl. The Service recommends that the survey protocol be examined and improved to increase the probability of detecting owls in such areas.

M. In the Paris and Holy Hollow Timber Sales on the North Kaibab, drop treatment in the "Points" area where the pine/oak type is present. This type of habitat on the edge of the Plateau and in the side canyons may provide important habitat for owls.

N. In the Paris Timber Sale:

a) Delete treatment of the 164 acres located in Sections 31 and 36 as identified in the letter from the Service of November 2, 1993. This will provide a continuous block of untreated old growth in proximity to the "Points" area where 2 possible responses from MSO were heard and will eliminate possible effects to the MSO.

b) Establish a MT based on the vocalizations of the owls that were heard near Timp Point on 29 June 1991 at T35N, R1E, S.31. The available data does not support the conclusion that the callers were hearing each other, and because the Forest Service has had ample opportunity to prove/disprove this conclusion. This MT should be maintained until further survey of at least one year indicates that no MSOs are nesting in this area.

c) The Service recommends conducting an intensive survey in these "Point" areas to determine if MSO are using this area prior to harvest activities.

O. In the Brannigan Timber Sale, the pine/oak habitat type should be re-evaluated to determine if portions within the sale area have oak of sufficient size and quantity to be considered suitable or capable habitat. Areas identified such as this should not be treated or should have the capable habitat recommendations applied. In the future, MSO surveys should be completed for the entire sale area if suitable or potentially suitable habitat is identified in the analysis area or adjacent areas.

P. The Service has concerns regarding the assumption that managing for the goshawk foraging habitat as recommended in the goshawk management guidelines benefits the MSO. The Service recommends against creating large areas with single-layered canopies. A diversity of canopies should be provided through managing a portion of goshawk foraging areas in a manner which maintains a multi-layered canopy. MSO habitat should not be degraded to implement the goshawk guidelines.

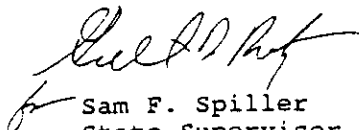
Q. The Service recommends against development of new campgrounds within MSO MTs. Development of such sites where very little or no previous activity currently occurs has the potential to detrimentally affect the MSO using the MT for an extended duration of time. These effects are difficult to quantify at this time.

#### CONCLUSION

This concludes formal consultation on the projects submitted to the Service by Region 3 of the Forest Service. As required by 50 CFR 402.16, reinitiation of formal consultation is required if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may impact listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

Thank you for your continuing efforts to conserve and recover threatened and endangered species on the National Forests. If we can be of further assistance, please contact Michele James or Tom Gatz.

Sincerely,

  
for Sam F. Spiller  
State Supervisor

cc: Forest Supervisor, Coconino National Forest, Flagstaff, AZ  
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## LITERATURE CITED

- Berner, L.R. and R.W. Mannan. 1992. Survey for sensitive raptors in the Rincon Mountains of Saguaro National Monument, Arizona. Report to the National Park Service. Cooperative Agreement Number 8000-2-9001. School of Renewable Natural Resources, University of Arizona, Tucson. 18 pp.
- Brown, B.T. 1991. Abundance, distribution, and ecology of nesting peregrine falcons in Grand Canyon National Park, Arizona. SWCA Consultants. Grand Canyon National Park, Arizona. 45 pp.
- Burnham, W.T. and J. Enderson. 1987. Three-year report on peregrine falcon surveys in southern Utah National Parks (1985-1987). National Park Service Report CX-1200-5-AO34. The Peregrine Fund, Inc. Boise, Idaho.
- Enderson, J.H., A. Harmata, W.G. Hunt, L. Kiff, C. White. 1991. Draft addendum to Pacific and Rocky Mountain/Southwest Peregrine Falcon Recovery Plans. Submitted to U.S. Fish and Wildlife Service, January 1991. 24 pp.
- Fletcher, K.W. 1990. Habitat used, abundance and distribution of the Mexican spotted owl, Strix occidentalis lucida, on National Forest system lands. USDA Forest Service, Southwest Region, Albuquerque, New Mexico. 55pp.
- Hays, L.L. and T.J. Tibbitts. 1987. Distribution of peregrine falcons in Zion National Park. Park Science 9(2):3-4.
- Ratcliffe, D.A. 1980. The peregrine falcon. Poyser Ltd., Hertfordshire, England. 416 pp.
- SWCA Incorporated. 1991. Environmental Consultants. Final report, 1991 Mexican spotted owl inventory, North Kaibab Ranger District, Kaibab National Forest. September 1991. 20pp.
- SWCA Incorporated. 1994. Correction to 1991 Mexican spotted owl report. Memo to Mr. Dan Garcia, wildlife biologist, North Kaibab Ranger District. March 9, 1994. 1 pp.
- Tibbitts, T.J. and B. Bibles. 1990. Peregrine falcon survey of the Arizona Strip District (1990). Final report to the Bureau of Land Management and Energy Fuels Nuclear, Inc. Arizona Game and Fish Department, Phoenix, Arizona. Cooperative Agreement #AZ950-CA8-001T3. December 1990. 37 pp.
- Tibbitts, T.J. and D.K. Ward. 1990a. Peregrine falcon survey, U.S. Bureau of Land Management; Phoenix, Safford and Yuma Districts. 1990 Final Report to U.S. Bureau of Land Management. Arizona Game and Fish Department, Phoenix, Arizona. Cooperative Agreement #AZ950-CA9-02. October 1990. 20 pp.
- Tibbitts, T.J. and D.K. Ward. 1990b. Peregrine falcon survey on National Forests in Arizona. 1990 Final Report to U.S. Forest Service. Arizona Game and Fish Department, Phoenix, Arizona. Cooperative Agreement #12-03-89-035P. December 1990. 46 pp.

- Verner, J., K.S. McKelvey, B. Noon, R.J. Gutierrez, G.I. Gould, Jr., and T.W. Beck. 1992. Assessment of the current status of the California spotted owl, with recommendations for management. Chapter 1 in Jarred Verner, Kevin S. McKelvey, Barry R. Noon (technical coordinators). The California spotted owl: A technical assessment of its current status; 8 May 1992. Final report to the Steering Committee for the California spotted owl assessment from the Technical Assessment Team. USDA Forest Service, Pacific Southwest Research Station.
- Ward, L. 1993. Arizona peregrine falcon reproductive survey. 1992 General Distribution Report. Arizona Game and Fish Department. Technical Report. Nongame and Endangered Wildlife Program. Phoenix, Arizona.